The duration of the process and the vascular phenomena speak for aneurism rather than mediastinal tumor. On entrance there was ulceration of the nasal septum and of the lower turbinate in the right nostril, and perforation of the septum has since occurred. The ulceration has healed under specific treatment, and must be regarded as a stigma of lues, despite the negative history.

A CASE OF POISONING BY SUBNITRATE OF BISMUTH.*

By GEORGE B. SOMERS, M. D., San Francisco.

Subnitrate of bismuth is considered so safe and harmless a remedy, that one hesitates to cast any reflection on its fair reputation. I believe, however, that an accident which recently came under my observation will show that the drug may not be used with absolute impunity and that toxic symptoms may follow its careless administration.

Mrs. C., age 26, married two years, never pregnant, complains of pain in the pit of the stomach, nausea and general malaise. Has had measles and mumps but no other severe sickness; her present weight is less than one hundred pounds, she is poorly developed, emaciated, pale. Sleeps poorly, poor appetite and habitually constipated.

F. H. Mother died of malaria; father alive and well; one brother alive and well. One brother died of tuberculosis, one sister of dropsy, two sisters died in infancy.

P. I. About four months ago she was taken during the night, with severe pain in the right lower chest, in the morning she felt better but a day or so later the pain returned this time situated in the epigastrium. The pain recurred at intervals during several weeks, her appetite became poor; she vomited considerably, the vomitus consisting mostly of greenish fluid. The nature of this sickness was not learned. During this time she was treated for the pain with hypodermics of morphin, which were given two or three times a day over a period of eleven weeks. She took no morphin herself. All that she received was given to her by her attendant.

At this time her physician asked me to see her on the supposition that she was suffering from some pelvic disease. An examination was negative as regards discovering any definite abdominal or pelvic trouble, but the addiction to morphin was so evident that I advised her immediate removal to the hospital with the idea of first overcoming the craving before attempting any diagnosis of her abdominal trouble. She was placed on a course of treatment for morphin habit suggested by Lambert in the Journal of the American Medical Association, September 25th, 1909.

This treatment was carried out for four days and was successful in overcoming the desire for the drug. She was then put on tonics and a liberal diet and by the end of a week from the beginning of the treatment she was very much improved in every way. From October 3rd to October 13th she seemed to be doing well except for some looseness of the bowels which was considered an after symptom of the morphin habit. She had from two to four watery movements a day and it was noticed that the number of passages in 24 hours gradually increased. October 12th she had five movements, October 13th six, October 14th she was ordered 20 grains of subnitrate of bismuth daily, given in 5 grain doses. This was continued three days. As the symptoms did not abate she was ordered 40 grains daily, in 10-grain powders given 4 hours apart. After this order the patient was left in charge of an interne and I did not see her again until the morning of the fifth day. On making inquiry about her condition I found that the bismuth had been given steadily during my absence, the total amount (including the first course of 20 grains daily) amounted to 240 grains spread over an interval of seven days.

The patient was in much distress, she was able to swallow only with great difficulty, her gums were swollen, sore and presented a dark bluish discoloration. Under the tongue were several ulcers. The tongue itself was red and swollen and presented several sores along its edges, a number of aphthae were scattered over the soft palate, pharynx and inner surface of the cheeks and the general appearance of the mucous membrane of the mouth was dusky. The diarrhoea instead of diminishing seemed worse. She refused nourishment and altogether was quite sick.

The bismuth was at once stopped, a dose of castor oil given and a mouth wash prescribed. She immediately began to improve and at present, about three weeks after the last dose of bismuth, shows little or no evidence of the mouth symptoms. No positive diagnosis has yet been made as to her abdominal trouble but it may be said that a Moro given a few days ago gave a positive reaction.

The question arises at once as to whether we can justly attribute the mouth symptoms in this case to the bismuth. I can only reply that the patient received a great deal more bismuth than I am in the habit of prescribing or than I intended to prescribe in this particular case, and secondly, the symptoms that she presented correspond definitely to the symptoms observed by others in cases of bismuth poisoning. It is quite possible that the patient either presents an idiosyncrasy to bismuth or that her physical condition rendered her more susceptible. I have not seen any cases of bismuth poisoning reported where the drug has been given by mouth. A number of cases, however, have been reported where bismuth has been applied to raw surfaces. In 1882 Kocher called attention to the danger of poisoning where bismuth is applied to wounds and in the October number of the Illinois Medical Journal five cases of poisoning following the injection of bismuth paste in tuberculous sinuses are reported, three of them with fatal results. The symptoms in general were characterized by ulcerative stomatitis, black pigmentation of the gums and mucous membranes of the mouth associated with enteritis and nephritis.

Discussion.

Dr. Jule B. Frankenheimer: Though I have not seen any cases of bismuth subnitrate poisoning I have noticed in the recent literature a number of cases of acute poisoning reported. The symptoms were those of a severe collapse with diarrhoea. The patients were all given large quantities of the drug for X-ray purposes. The symptoms were ascribed to a splitting up of the nitrates into nitrites.

Dr. Sol Hyman: It would be interesting to know just what kind of subnitrates of bismuth Dr. Somers employed; because Baer working with this drug in surgical tuberculosis in two different hospitals found that in one hospital his results from this drug were good and in another hospital his results from use of the same drug were uniformly poor. He found that in the hospital where the results had been poor that the subnitrate of bismuth contained lead as an impurity. As the cases reported bear a striking resemblance to acute lead poisoning it would be worth while to know whether a pure form of bismuth subnitrate has been used.

* Read before the Cooper College Science Club.

Dr. Henry Gibbons, Jr.: This paper is a great surprise to me because I had not appreciated that subnitrate of bismuth is poisonous, I have used it very largely and have never found any poisonous properties. It was the best remedy that we had for diarrhoea in the War of the Rebellion and I remember one colleague who gave ½ oz. of the carbonate at a dose, and I have rarely given less than 20 grains. Recently I had a case of diarrhoea in which I gave that quantity and the passages were perfectly black for ten days without any bad effects being experienced. I could not avoid the impression as Dr. Somers read his paper that there were some impurities in the subnitrate; that there was lead present or some other source of contamination.

Dr. George B. Somers, closing discussion: I have not taken pains to find out whether this subnitrate of bismuth was perfectly pure. According to those who have made a deeper study of the subject they seem to think that the purity of the drug plays very little part in the production of the symptoms. There was one point raised in reference to the variety of the symptoms. The poisoning may take one or two forms; one where the symptoms are mostly in the mouth, characterized particularly by the bluish line, this form is supposed to be due to absorption of the metallic bismuth. The other form such as Dr. Frankenheimer mentioned is due to the splitting up of the subnitrate into nitrites and shows mostly bowel symptoms owing to the irritating properties of the nitrite upon the intestines. We do not know why some cases are poisoned and others are not. At the time that Kocher called attention to poisoning by the use of subnitrate in fresh wounds he said that the insoluble bismuth subnitrate was converted into the soluble albuminous nitrate when dusted on raw surfaces. From the case that I have reported and from the large number recently reported in the journals one feels justified in offering a word of caution to the indiscriminate use of subnitrate of bismuth.

AN UNUSUAL CASE OF STRANGULATED HERNIA.

By ROBERT B. DEMPSEY, M. D., Vallejo.

In presenting this paper to the medical profession, the writer is offering no new suggestions on the surgical treatment of hernia, but merely directing attention to a condition brought about by what in this age of clean-cut and aseptic surgery must be considered little less than a crime against the innocent and unsuspecting victim.

I was visited one evening by a man who complained of intense pain in the left inguinal region and an examination revealed a large mass, very tender to touch, indurated and inflamed. Constipation was absolute, not even flatus passing, abdomen much distended, face hippocratic, pulse small and tension low, subnormal temperature and moist skin. In fact many of the symptoms of shock.

He informed me he had hernia since a child but had been cured some years ago by Dr. A. (who has recently had his license revoked for unprofessional conduct) by injections of a clear substance in solution, probably zinc chloride, into region of both rings and at various other places in the inguinal region.

It was plain at a glance that he had strangulated hernia, and as taxis failed to reduce it, I arranged to operate next morning. With the assistance of Doctors Fry and Bond the regular Bassini incision was made through the skin revealing a sausage-shaped tumor composed of the pampiniform plexus, vas, a loop of intestine, and hernial sac, all matted together by dense fibrous adhesions and grown solidly to the pillars of the internal ring. Within the abdominal cavity were numerous adhesions binding the intestines into a mass and firmly adherent to the peritoneum. The intense inflammations produced by the injections had caused the entire disappearance of the muscular fibres of the external oblique for quite a distance from the canal, leaving in its place a fibrous membrane, probably the sheath of the muscle, so thin as to be transparent, and loosely adherent to the skin, the fatty layer having disappeared as had the muscular fibres.

The conjoined tendon of internal oblique and transversalis had numerous areas of heavy scar tissue distributed throughout its substance, and the only structure not affected was Poupart's ligament.

The cord was composed of vas, remains of numerous veins and arteries all occluded, and imbedded in a mass of fibrous tissue about three inches long and two inches thick, and within this mass was a knuckle of compressed intestine, causing the obstruction.

As the patient went to operation almost in a condition of shock and had stercoraceous vomiting while upon the operating table, little was done but to dig out and separate the knuckle of intestine, which required nearly two hours, remove some of the veins of cord and return the same to the abdomen, suturing the remains of conjoined tendon of internal oblique and transversalis over the cord, as in Fowler's operation, there being not sufficient left to form a floor for a new canal. The remains of the aponeurosis of external oblique were sutured to Poupart's ligament and the skin closed with a subcuticular stitch.

The history of the following month was that of an ordinary hernia. At present the abdominal wall is firm and if structures covering cord are sufficiently firm, hernia will probably not recur, as the intestines are firmly adherent to abdominal wall and cannot descend.

As it was, we did the best with the material at hand but how much better had this man had a radical operation when all the structures were normal, than to suffer for years and nearly lose his life as the result of a procedure which should never be mentioned except to be condemned.

It seems that the injection method is still being used quite extensively, and though it may be safe in skillful and competent hands, the radical operation not only offers by far the best chance of cure but is free from the dangers of strangulation by inflammatory bands as in this case.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

Ampoules.

The preparation of sterilized solutions in glass tubes or "Ampoules" originated in Limousin, who in 1886 made bulbs out of glass tubing, drew up into them heated solutions of medicinal substances and sealed the tubes in an oxyhydrogen flame.

This method of procedure, however, failed to yield satisfactory results owing to the development of bacteria and decomposition products, due to faulty sterilization and improper handling.

In the method now employed the cold solution is accurately measured into the tubes or bulbs, the glass is sealed immediately and the whole subjected to the sterilizing process.

The Jena glass, usually employed in the manufacture of the bulbs, is thoroughly cleansed and rinsed with distilled water, then dried and melted into shape.

The solutions are carefully filtered and the tubes filled by means of a pipette, in an atmosphere as free as possible from dust. The process of ster-